Forest Product Uses for Saving Fossil Fuels

ENERGY generation from forest product resources is economically viable only if the high-quality part of this resource is fully dedicated to high-added value utilizations, mainly for construction and housing sectors. In such a way, wood by-products and co-products to be used for energy have lower cost prices.

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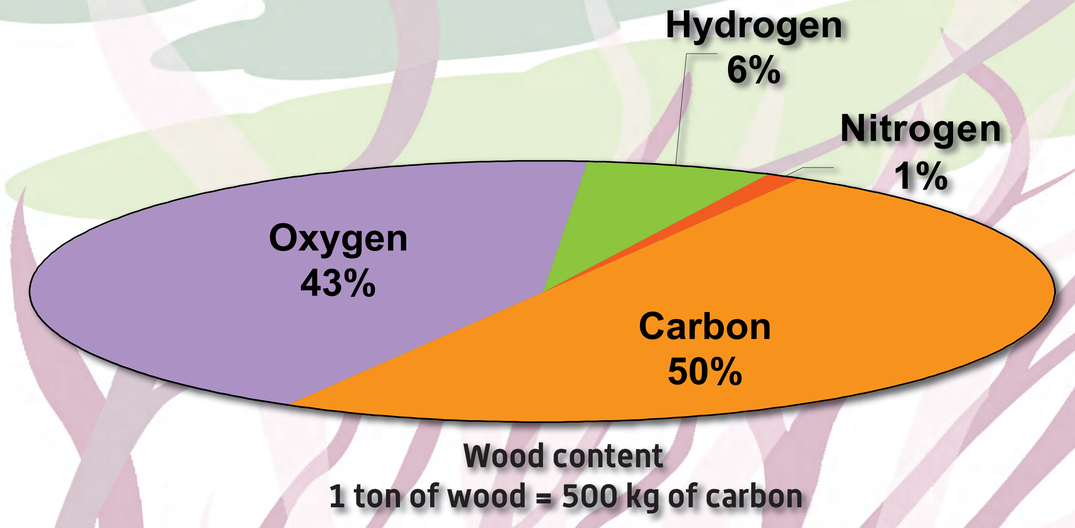
http://ur-bois-tropicaux.cirad.fr

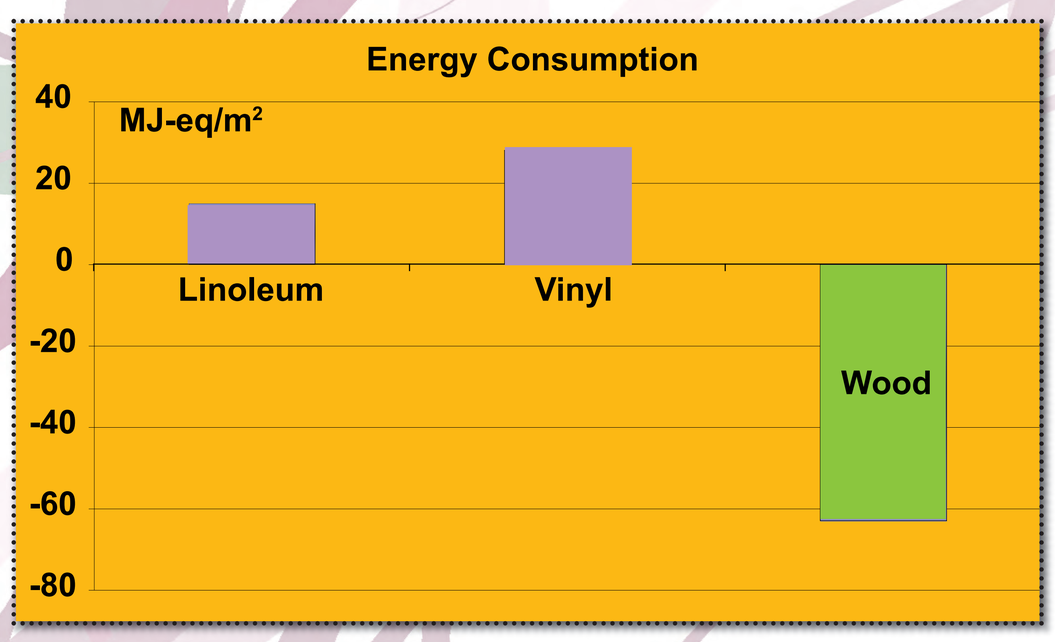


Lignocellulosic materials, mainly wood, store carbon during the elaboration stage and durably retain it after final products processing and manufacturing: **1 ton of these materials embodies 0.5 ton of carbon, and1 m³ captures 1 ton of carbon dioxide.** Due to this carbon storage capacity, wood and related material applications contribute to reduce negative impact of fossil fuels utilization. At the end of their life cycle, they are used for energy production, consequently limiting fossil carbon releasing into the atmosphere.

Material	Embodied Energy (MJ/kg)
Kiln dried sawn softwood	3.4
Kiln dried sawn hardwood	2.0
Air dried sawn hardwood	0.5
Particleboard	8.0
Medium Density Fibreboard (MDF)	11.3
Plywood	10.4
Glued-laminated timber	11.0
Laminated veneer timber	11.0
Plastics (general)	90.0
PVC	80.0
Acrylic Paint	61.5
Glass	12.7
Mild steel	34.0
Galvanised mild steel	38.0
Aluminium	170.0
Copper	100.0
Zinc	51.0

Process energy requirements for some common building materials.
(source: *Review of the Environmental Impact of Wood Compared with Alternative Products Used in the Production of Furniture* - Forest & Wood Products Research & Development Corporation – Australian Government – 2003)

One of the main objective of the "Grenelle de l'Environnement" Conference (Paris, 2007):
to develop well-balanced (and carbon free) energy production and promote sustainable chains, including biomass, in order to preserve biodiversity and natural resources.



Net energy consumption for 1m² of flooring material. In the case of wood, this is a net gain in energy.
(source: *Review of the Environmental Impact of Wood Compared with Alternative Products Used in the Production of Furniture* - 2003)

Material	Carbon released (kg/ton)	Carbon released (kg/m³)	Carbon stored (kg/m³)
Rough sawn timber	30	15	250
Steel	700	5 320	0
Concrete	50	120	0
Aluminium	8700	22 000	0

Carbon released and stored in the manufacture of building materials.
(source: *The Environmental Properties of Timber* - Forest & Wood Products Research & Development Corporation - Australian Government - 2004)

Je prétends qu'au-delà d'un niveau critique de consommation d'énergie par tête, dans toute société, le système politique et le contexte culturel doivent dépérir. Dès que le quantum critique d'énergie consommée par personne est dépassé, aux garanties légales qui protégeaient les initiatives individuelles concrètes, on substitue une éducation qui sert les visées abstraites d'une technocratie. Ivan Illich, *Energie et équité*, 1973.

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LISBON – PORTUGAL
www.iufro2012.org

Conception : CIRAD, Martine Dupontal, juillet 2012